THE INDUSTRIAL LABOUR WELFARE ASSOCIATION LTD.

COIMBATORE

Welcome Address by

Sri G. D. NAIDU,

President, The Industrial Labour Welfare Association Ltd., Coimbatore

and Speech by

Sir C. V. RAMAN, Kt., F.R.S., N.L.,

Director, Raman Research Institute, Bangalore

and Vote of thanks by

Professor A. VISWANATH, B.E.,

(Mysore Civil Engineering)

on the occasion of the opening of the

18th SHORT TERM SERVICE ENGINEERING COURSES

on Saturday the 25th April, 1964

at

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"United Motors Buildings",

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Speech by

Sri G. D. NAIDU

Dear Friends,

Glad to see Sir C. V. Raman here after more than a decade. Though he is not coming here often, we are constantly hearing the news about his scientific researches and other important activities. Sixteen years back he addressed a party in "Gopal Bagh" on 24—3—1948. Again he addressed another meeting at "Gopal Bagh" on 28-6-1948. Then on 15-11-1948 in the same place he addressed another meeting. On the 17th September 1949 in the same place he inaugurated the South India Centre of the India Society of Engineers, Calcutta, when I was elected the President.

Then in 1950 at the Madras Engineering Licentiates' Conference presided over by Sri A. R. Venkatachary, B. E., M. I. E., (Ind), Chief Engineer for Irrigation, Sir C. V. Raman inaugurated the conference on 8—4—1950. On the 9th June 1951 he distributed the certificates for the students

who passed the 6th Vacational Course at Gopal Bagh. Then again he addressed another meeting on 2—2—1952 at Gopal Bagh. Then lastly on 28—2—1953 he addressed the students in our Hostel.

Now in these 11 years since his last address, there have been many changes in the scientific world, as well as in Politics, business, Industry, population, diseases, morality and several other good and bad things. We are all anxious to hear about the scientific research developed in the Institute started by him in Bangalore with the name Raman Research Institute. I have no words nor I have suitable English knowledge to describe him adequately or to introduce him to the audience here. There is no need for introducing the world famous leader of Science Nobel Laureate Sir C. V. Raman.

He has now agreed and come here to inaugurate the 18th Vacational Course in Automobile and other service engineering courses. These courses were previously conducted in a small building in Gopal Bagh. On account of insufficient space there, another building and site was purchased in front of Gopal Bagh and the construction work has started now. It is being delayed for want of building materials. For purchasing the hostel

buildings and lands many persons, who are here, have helped by way of substantial donations. For building also a friend has promised to collect sufficient funds himself and he has already collected substantial funds.

On account of the delay in the construction of the above buildings, the Vacational Course is started for the first time in this U. M. S. Central Buildings, where more than sufficient built up area is available, and where we are having this function now.

This place was occupied by the Bus Services from the beginning in 1928 upto 1963. For a long time these bus services were running about 280 vehicles for passenger transport and had a big workshop. Now all these space has become available to conduct these courses until the new buildings come up.

I am not an expert engineer with a Degree or with College Education. I was giving training to Apprentices in a crude way. In 1940 when I was in U. S. A. at the time of War, when our Government branded me as a Pro-German, no funds could be remitted from here. While I was in U. S. A. I went to more than 20 Engineering Institutions to see how quickly and

how efficiently they were teaching the Engineering subjects. Then I got several Diplomas. Many institutions gave me free of cost different types of teaching materials, about 4 wagon loads, which I brought with me. On my return I offered those materials to the Government to open a Polytechnic in this place, where the Government opened a Polytechnic originally, in this same place.

I was also appointed as Director of the Polytechnic. By the experience I had gained in U. S. A. I was able to reduce the period of training four years automobile course and 2 years Radio Course to 1 year, imparting better knowledge than the long year students. But the Government did not agree to reduce the period to anything less than 3 years.

Then I resigned and started three weeks courses instead of 3 years courses in the Government Institution in the same compound. In the beginning the four years course was condensed to 60 lectures to be completed in one year. Then again it was condensed to 18 lectures to be completed within 3 weeks, which is now extended for 6 weeks. This reduction of teaching time was possible by films and other teaching materials so well organised in order to imprint easily in the minds of the

youngsters. Whoever personally visited appreciated more and more. In appreciation of these courses a sum of £. 2,000/- was paid for these 18 lectures, as they were so concise and so clear to the young mind. Some of the visitors have recorded their opinions and some of the opinions are given hereunder.

Dr. H. B. Mohanty, Planning and Reconstruction Department, Cuttack :-

Ever since I visited your ideal institution, I have been insisting on my government to send a few students there for training in Automobile and Radio Engineering. Government have now sanctioned scholarships and they have asked me to request you to kindly spare as many seats as you conveniently can this year. Our requirements are three seats in each of the subjects, but we will be satisfied with whatever you can spare. I am therefore making this personal request, because, I have told my Government that the boys receive a type of training in your institution, which they will get no where in India. I have seen most of the institutions in India and my firm conviction is that the training and moulding of character for which your

institution provides facilities is unique in India. That is why we are so very anxious to get a few students trained there and I hope we will not be disappointed.

Sri H. C. Deo, A. M. I. E. T., Assistant Controller of Transport, Orissa:

I am sorry I could not write to you earlier however much I wished to do, on account of pressure of work here and I hope you will excuse the delay.

During the period of my training in Automobile Engineering in your institution as a candidate deputed by the Government of Orissa, I could acquire very useful knowledge, both practical and theoretical which stands me in very good stead in my regular work.

Sri J. J. Rudra, Principal, College of Engineering, Saidapet P. O. Madras.

My contact with you at Coimbatore was an education to me and it has given me faith in the industrial possibilities of the country. You have achieved great things as an Engineer and have been a greater source of

education to my students at Coimbatore than all the lectures and laboratory classes put together.

Prof. Humayun Kabir, Minister for Scientific Research and Cultural Affairs, Government of India dated 1—6—1958.

Here is the wonderful change and if the boys in the course of two years can learn as much as is taught in the Engineering College for four years and if they can prove that in actual practice in life I would be in a very difficult position. Then very soon, all the engineering colleges will be empty. All the students will flush here. Mr. Naidu knows better than any one that hundreds of people with B. Es. i. e., Bachelors of Engineering, Masters of Engineering, perhaps Doctors of Engineering, fare far worse in life than persons who by their will, their grit and their character, have made good and some are very great mechanics, though they have no degrees at all.

Mr. A. J. Lund, Chief Engineer, Cooper Engineering Co., Satara:

To-day I came from Bangalore to Mr. G. D. Naidu's Bungalow at "Gopal Bagh". I have seen here methods for

educating students in engineering, that is, mechanical engineering, electrical engineering, radio and other types of industry.

I feel that the methods employed here are something very unique indeed and not employed in any other country I have visited so far. For India to industrialize, such form of education, to my mind, is absolutely essential. One particular aspect is the time with which this education and instruction are imparted in the ordinary way as against the methods employed by Mr. Naidu. He often remarked that courses as given in other countries, may be 5 years or 3 years or 2 years, but could be imparted at Mr. Naidu's place in a matter of one year, 6 months, 3 months or down to a matter of weeks. But at first without seeing the actual methods employed it sounds somewhat fantastic, but after seeing the methods, the various diagrams and instructional methods used, it is quite easy for one to understand how much knowledge can be acquired in the short space of time. India today is free to industrialize and I think every one realizes the wonderful opportunities for the country in every form of industry. Many

nations with educated people achieved industrialization over a very very long period. That was no doubt due to the methods employed in those days whereby it took long for this knowledge to be acquired.

I feel that there is a very great future for India in industrialisation, provided that this comes about by employing proper methods. First of all, we must educate the population so that they are able to serve efficiently and with knowledge in industry. In the ordinary way, it takes a long time and I do feel that every type of educational institute throughout India should adopt similar methods to those employed by Mr. Naidu.

Once more I must say how unique the methods are that are employed by Mr. Naidu at "Gopal Bagh".

Letter from Sri N. M. Adyanthayya, Joint Director of Industries and Commerce, Madras, to the Secretary to Government, Development Department on Mr. G. D. Naidu's resignation as Honorary Director:

I consider, therefore, that the suggestion to grant diplomas in the

second year is not sound and cannot be applied generally to the whole province. Mr. G. D. Naidu is a capable, hard-working and most enthusiastic automobile engineer and I dare say, by his drive he may produce in 2 years, results which other institutions or individuals cannot produce in 4 years. But unfortunately, there is only one G. D. Naidu in this province and what may apply to him cannot possibly be made applicable to the generality of men in the province. Since Mr. G. D. Naidu, however, insists on diplomas being granted at the end of the second year and since he has made this a condition to his continuing as honorary director, he may be informed, that a special meeting of the board will be convened for the purpose and the decision thereof will be communicated to the government for their final orders.

Sri Girdhardas G. Morarji, Municipal Councillor, Bombay and Chairman, B. E. S. T. Bombay:

I had heard about you and your work but from a distance. I was never able to appreciate the genius you posses. Today, thanks to your courteous reception, I was able to see with my

own eyes, the wonderful activies you are carrying out in your day to day life. From what I have seen and heard from your own mouth I am inclined to believe that you are an asset to the country and I fail to understand why your abilities are not availed of by the Government for the good of the country. You are a national asset and you can be well "Nationalised" as such. I sincerely pray to God that God may give enough inspiration to the powers that be, to take full value of your abilities, sincerity, knowledge and culture for the use of the nation. I have decided to study your philosophy, psychology and methods of working. I am sure I will add a lot to my knowledge and experience. May God spare you long to be useful in the service of our motherland.

Even the then Industries Minister Sri V. V. Giri who visited this institute in the beginning mentioned in his speech as follows:

Mr. Naidu is an old friend of mine and when we started the All-India Planning Committee, Sir M. Visvesvaraya and myself thought that he must have the first place in that

committee. He is a practical engineer of a type not easily found in this country. I do not wish to flatter him in his presence. And I always thought of dealing only with the strikes of students or strikes by workers but never strikes by employers and managers of big institutions. Mr. Naidu, you must have known sometimes to your cost and sometimes to your advantage, is not an easy person to deal with. But I am absolutely certain he has a heart inside which is quite soft. I know he does not mean executing a threat. It is only a reminder to Government to be very careful in managing the institution of this country. I could see a good deal in what he has started. As he is a super engineer, you will, by putting more years, be super engineers also which position may not be got by other polytechnics. I would certainly examine the question from the point of view of the hours that are spent in the institution both by the lecturers and see whether similar things cannot be done in other polytechnics and I shall make Mr. Naidu responsible for that also. He wants to get out of the institution. He will have to get into many institutions throughout the length

and breadth of the land Therefore there is no use of his being selfish and saying.

"Coimbatore is the only place for me and the students of Coimbatore are the only students with whom I am concerned".

He must produce and tell me, "Here you are, in one or two years we can produce similar students that we are producing in Coimbatore". Government will take his honorary service always and he must really set up an example to other institutions and tell them as to what they should do.

I am not at all anxious that course should be prolonged in any other polytechnic, but at the same time I feel I am not an engineer, I am not a practical worker, but still I am just generally interested in industrial planning of this country. These courses are quickly terminated and individual workers become efficient by remaining a little longer after the diploma course is over, doing some research, which can make them better students and they can get their diploma after that. I was taken by surprise because the director of

industries did not tell me about this and he himself was not prepared to receive the bomb shells that were thrown at us by Mr. Naidu. Any way I have always an open mind in these matters, never wedded to think because they are ancient, never wedded to think because they are modern. I am for both modern and ancient and anything that will make us a better nation. Therefore, certainly the matters stated by Mr. Naidu will have the Government's serious consideration and I am certain that the director will have further discussion of these matters and if necessary all three of us will sit together and thereafter, if necessary, meet the board after we examined the question and place these matters before them. Anything that we can do to reduce the course certainly will be duly considered by the Government and with this promise, I want Mr. Naidu to withdraw his atom bombs that he wanted to level against us and I am certain that with the help of Mr. Naidu the polytechnic not only in Coimbatore, but other polytechnics established in other parts of the province also will be a success. He is our future hope. I am certain he will render benefit to other institutions so that they, young

men, who are in the other polytechnics to-day will ever remember him throughout their lifetime.

I am pleased at the way in which practical work is being taught to students here and I am absolutely certain that when you finish your course and take your diploma you will become very satisfactory engineers and it is my job and the government's job to see that you are placed in life very well.

Subsequently when Sri Lala Sriram visited he made the following remarks:-

Sri Lala Sree Ram who came and inspected this institute has written a letter to the following effect. (Extract) Letter New Delhi dated 27th Dec. 1948.

"It was a very great pleasure to me indeed to spend the $2\frac{1}{2}$ hours which I did with you and I learnt such a lot. I have read all the books that you gave me and I again have learnt certain things. I sent a telegram to the President of the University's Commission and also a telegram and letter to the Honourable Minister for Education, Madras and personally spoke to Dr.

Tara Chand, a Member of the University Commission and Secretary of the Education Department of the Government of India to visit your institute at Coimbatore and discuss with you ideas about giving education in engineering".

The Army Department also were so anxious to introduce this system in their training courses. The following letters and remarks will show this :-

General S. M. Shrinagesh letter dated 5th July 1956:

My Dear Shri Naidu,

"It is most kind of you to agree to give training in radio and automobile engineering to officers and men of our Army. I am sending this note with Lt. Col. Rebeiro and Jemadar Pillai, who are working in our Army Workshops at Bangalore. These two officers have recently done a course of radio and automobile engineering in Army Workshops. I wonder if you would be so good as to see them and show them what you have showed me. I know you are very busy now with an important conference, so perhaps one

of your Assistants could show them round, but I would like you to meet them, if possible.

I have asked Lt. Col. Rebeiro to see me in Delhi after he has met you and I will write to you from Delhi after I have seen Rebeiro. My reason for sending this officer is to get his technical advice of what type of men we could send to you.

I leave tomorrow for Delhi and before I go I do want to say that it was such a great pleasure to meet you. I thank you again for all your kindness.

With my kindest regards".

"Copy of letter dated 8th July 1956 from Lt. Col. Rebeiro:

I had the good fortune to be sent by the chief of the Army Staff to act as his eye and see in detail what he could not due to shortage of time. I have tried to carry out my task as thoroughly as possible by seeing every nook and corner of this wonderful place. I must admit I have been astounded at the range and quality of technical activities in "Gopal Bagh".

I carry away with me many technical impressions and lessons. The instructional and development potential of "Gopal Bagh" in the technical field is indeed very great. I shall convey these impressions to my chief."

"Copy of letter dated 14th July 1956 from S. M. Shrinagesh:

My Dear Shri Naidu,

Lt. Col. Rebeiro, the officer I sent to you, has come up to Delhi and reported to me regarding the facilities you offer to train technical personnel of the Army. The report submitted by Lt. Col. Rebeiro is under consideration and I will be writing to you as early as possible regarding the final decision taken in the matter.

I would like to take this opportunity to thank you for the trouble you took in looking after my officer and taking him round your Institute, in spite of your other important pre-occupations.

I hope you are well."

Copy of letter dated 27th July 1956 from the Chief of the General Staff. New Delhi:

Shri G. D. Naidu ....

Colonel M. M. Nath, Director of Technical Training, Army Headquarters will visit the Automobile Engineering Institute, Coimbatore on 7/8 Aug. 56 to find out what training facilities are available and to explore the possibility for the training of Army Officers at the Institute.

I shall be grateful if necessary facilities for Colonel Nath's visit are provided.

Copy of letter dated 8th August 1956 from Mr. M. M. Nath:

I have spent two days with Mr. G. D. Naidu seeing all his activities. His interests are varied and he has achieved a tremendous amount. He has a creative brain and is always trying to do new things. His one aim now appears to be to impart the technical knowledge that he has gained by travelling far and wide, to others. He has collected a wide range of

equipment, training films and other training equipment which can be very usefully utilised.

"Copy of letter dated 14th Aug. 1956 from Col. M. M. Nath.

Dear Shri Naidu ....

A few lines to thank you for your very kind hospitality and for showing me all your activities.

I have no doubt that the equipment, training aids and films you have carefully collected during your visits abroad and the facilities you have for training have great potentialities for imparting technical training to young men in the country. My only regret is that they are not being utilized fully. I am sure you will think out some scheme for putting them to maximum use.

The two days I spent with you were a great education for me. I was very impressed with your capacity for hard work, ability to organise and original thinking.

I do hope I have a chance of meeting you again some time."

"Copy of letter dated 14th Sep. 1956 from Col. M. M. Nath:

It is proposed that some personnel from the Army are sent to your establishment to see what training aids and other facilities you have and how instruction is imparted when a course is in progress.

I shall be grateful, if you could please let us know the dates of your next course if it is possible for you to forecast them now so that we can send some of our personnel over.

With best wishes."

From Germany also some students came here for Automobile and Radio Engineering Courses.

Even Now Mr. Mohanty Addl. Secretary, Industries Department, Government of Orissa, during his recent visit has asked us to take up some students to be trained in these short term courses. We have agreed to admit 6 students. (Copy of letter dated 17-4-64 from Dr. H. B. Mohanty).

You had very kindly agreed to admit at least 6 of the students recommended by me into the Automobile

Course which will start in your institution from May this year. I am recommending the names of the students to Shri Biswanath and I hope it would be possible to accommodate them in the Course that would be starting in your institution in May.

In the first one or two years I could not get more students, though I offered free boarding and lodging. After a few years there was very good response and appreciation and enormous number of applications were received. There was only concession that no fees for private students, but whoever coming from Government service had to pay Rs. 600 to 1000 as fees.

In 1955 in 5 days more than 4000 applications were received. When I was in London in 1955, an advertisement was made for Short Term Courses. It was published in the Hindu on 6th April 1955. Within 4 days 4000 applications were received in the I. L. W. A. Office here and I received a letter dated 11th April 1955 from Coimbatore.

Short Term Course

As in previous years, six weeks Short-Term Vacational courses in Automobile Service Engineering and

Radio Service Engineering will be conducted from 24th April to 5th June, 1955.

The applicants should be here punctually on 18th April 1955, for joining.

For particulars and prospectus, apply immediately to President, The Industrial Labour Welfare Association Ltd., Avanashi Road, Coimbatore.

Camp: London.

27-3-1955 G. D. Naidu.

Copy of letter dated 11th April 1955.

The courses begin on the 24th April. We have received nearly 4000 applications for prospectus upto now. Still we expect an equal quantity. But it is felt, in your absence it will be very difficult to maintain strict discipline. So the accommodation is limited to 60. Students are rushing to our Institute daily for getting a sure chance. This year the number of applications for prospectus is greater than in previous years.

In the next three years the number of applications increased to 7,000, 8,000 and 9,000 and it was found impossible to make selection limited to 120. In subsequent years when it was advertised that only students with 75% of marks in English and Mathematics should apply, the number of applications was below 1000. In all these years students with qualifications of B. A., B. Sc., and P. U. C. were selected. Then some school final students were also selected as cleaners but with a concession that they can sit for the examination. Many of the students with School final qualification passed with higher ranks than the Degree holders.

As a test last year advertisement was made as follows for students who failed in the S. S. L. C. Examination in the same year for this Automobile Course.

"An Opportunity for S. S. L. C. Failed Students, March 1963:"

> Students below 18 years of age, failed in S. S. L. C. examination held in March 1963 can apply before 31 July 1963 for apprenticeship in practical training for a period of 3 to 6 months. Candidates failed in P. U. C. second attempt can also apply.

Selected apprentices will have to stay in the hostel and Rs. 52/- (Fifty two only) per mensem will be given towards the hostel charges.

Sd. G. D. Naidu,

24-6-63 President.

In the final test they were better than the Degree students. Some of these S. S. L. C. failed students but who underwent the last course are demonstrators for the present courses with students holding degrees. It shows that when boys go higher and higher in college education, they are becoming lower and lower in their practical work and knowledge. Though I am repeatedly telling like a parrot to our authorities to change the system in technical training system in technical training, our Government is very adament to persist in their own way of teaching, while they are very quick in adopting anything from other places, but not suitable to us. After twenty years of hard experiences, though there is no change in the system of syllabus in the college studies, and Government institutions the Government have started a more useful training Institute than the colleges with a short period of 18 months in the Industrial Training Institutes.

In my opinion this is the only type of institute which is more useful than any other colleges and buildings opened by our Government and which have grown as Mushrums. Still if they introduce the training systems as adopted here and if they agreed to reduce it to 3 months they will be more suitable and more useful for our country. In that case the educational expenses will be reduced to 1/4th. With that reduced expense 4 times better training to 4 times more number of students in less than 1/4th of the present period, they could be trained. Perhaps after another 10 years or more we can expect such changes.

For Example I can site a recent instance.

I brought out some special Pappayas, red-gram and cotton. Though I gave seeds free for several years nobody cared for them. Our Chief Guest made a remark in 1948 as under:

Copy of letter dated 29th June 1948 from Sir C. V. Raman:

Unique.

Like Luther Burbank, Mr. G. D. Naidu has sought to improve upon Nature's creations in the plant world.

His methods are original, if unorthodox. I have been photographed standing besides cotton and maize plants of dimensions not quite Brobdingnagion-but nevertheless of the believe it or not, variety-stimulated by the strong medicines contrived by Mr. Naidu's fertile ingenuity or imagination - call it what you like. I hope the world at large will benefit by his experiments".

Now after 20 years I received letters from the collector of Madurai and from Panchayat Officers for the seeds. They read as follows:

Collector of Madurai's N. O. No. K7/60504/G/63 dated 26—1—64:

Dear Sri Naidu,

I have started a programme in this district for the planting of fruit trees in Kitchen gardens and back-yards. The pappaya plant is, as you know, one of the ideal fruit trees, high yielding and of very high nutrient value. I am hoping to plant atleast a 100 trees in every village in my district. I find that as yet few pappaya trees have been grown in this district. Even these trees

bear very poor quality fruit. The best way of propagating this fruit would be by making readily available seeds of good pappayas to villagers through the block development staff, at as low a cost as possible preferably free. Having heard of the excellence of the pappaya fruits raised by you in your farm (and also tasted them); I thought I could approach you with a request to supply me in the first instance 20,000 good seeds. Kindly let me know whether you could comply. Also please let me have any special instruction needed to raise good seedlings from your seeds.

"Copy of letter dated 29—1—'64 from Commissioner of Tirupparankundram :

Sir,

During the Panchayat Union Council Meeting of this Block an appeal was made to all Panchayat Presidents to raise kitchen gardening and plant one or two fruit seedling in the backyard. For this purpose Pappaya was suggested and all agreed to select the same for planting them in the Panchayats. During the discussion many presidents who have visited your

farm and seen the good variety of Pappaya grown there, requested me to approach you to get the seeds of the same. The variety available here is somewhat low yielding and takes nearly one year and half to yield. Since we have prepared to raise nearly 20,000 plants this year I kindly request you to send seeds just enough to raise 20,000 seedlings and distribute them to various Panchayats in this Union.

(Sd.) Commissioner.

Copy of letter dated 11—3—'64 from Commissioner, Perana Mallur Post, N. A. Dist:

Sir,

I request that I may kindly be supplied with five ounces of good variety of Pappaya seeds. The seeds may be sent to me for early settlement.

(Sd.) Commissioner.

I had never met the Collector. I think he belongs to a new generation. I am sure our old generation Government authorities won't go for anything new. I am glad even

though after some years our younger generation are anxious to do something better.

In these courses there is nothing new and hard ways or means except the introduction of films in continuation of lectures and practical work. It could be easily adopted in every institute. It may be a little difficult in the beginning. But if the Government gives some little help it would be easier for any institution. Now we can bring any materials such as cars or refrigerators or some other equipment from foreign countries but it is very difficult to get any materials needed for training or research purposes.

When I was the Principal of the Polytechnic, when I applied for tools and films. Reply was "Dollar Shortage". In the same period I was able to get steel furniture made in U. S. A. on which we are sitting and Oldsmobile Car made in U. S. A. which we are still using.

When I brought very valuable educational films it took two years for clearance. Meanwhile Rs. 45,000 Port Charges were levied and subsequently cancelled. But 3/4th of the films were spoiled as they were lying in the goodown for few years.

Even now one small film useful for educational subject is lying in the Bombay Port from 1960 or 61 and came for auction now and it is not yet cleared.

"Copy of letter dated 26—3—64 from Docks Manager, Bombay:

In continuation of this office notice No. SW/1-1 dated 15-12-60 requiring you to effect immediate removal of the undermentioned goods consigned to you, I have to inform you that as the said goods have not been cleared by today, the same are being disposed of by Public Auction in accordance with the provisions of Section 64/64A of the Bombay Port Trust Act, at 2-30 on 9—4—64 at No. A. Uncleared Goods Warehouse, Alexandra Dock.

M/s. Victoria IGM/1696 15-12-60.

Item No.: UB-13.

Marks and No. of pkgs.: Mr. Naidu C/o L. T. Bombay.

Conts.: 1 parcel said to contain film Material.

I had attended the auction in regard with the film material, but since the minimum bid was about Rs. 403-00 I left the matter there.

I can give numerous instances of obstacles by or through the Government and about the way of developing our country's wealth or knowledge. Government production or rules, regulations, laws and acts are very high. The result of such rules and acts are the production of corruption, red-tapism etc. which are also very high.

Lastly the Government says that the Bribe giver and taker both will be punished. I don't know who is going to give punishment to Government who is giving room or producing materials for production of corruption. Unless heavy punishment is given for the root cause of corruption, corruption will not disappear or put down.

I am sorry I have dragged on to some other subject.

Now for the last one or two years, my work and health did not permit me to give my full time attention to the training work. I tried to get a suitable Engineer and Principal. I failed to get one. Now fortunately I got Prof. Viswanath, who was the

Principal of the Arthur Hope College of Technology, with which I had good connection. In the year 1949 there was 94% of Pass, when he was Principal. It is impossible to see now-a-days such high percentage of passes in Technical education. We are fortunate to get such a highly qualified Engineer with so much of enthusiasm and integrity for running this course here.

Now the place and equipment are ready, but most of them to be fitted and run by the students. Specially there are two advantages for the students during this year. Many of the equipment they are going to make, assemble and run. Usually when they go for any training they won't get any opportunity of dismantling and to assemble the valuable equipment. Usually when they go to any institution all the equipment will be ready and they can learn handling and running, but not-setting up or handling. This special advantage is available only in this year's course.

No fees are charged for these courses. Upto now no fees charged and for this year's course no fees charged, while from next year there will be heavy fees charged.

I hope the students who are in this course will enjoy their bright future with the blessings of our friend Noble Laureate Sir C. V. Raman.

With these words I request you, Sir to inaugurate this Short Term Courses at this function for the benefit of our youngsters and our Country.

Speech by

Sir C. V. RAMAN, Kt., F. R. S., N. L.,

Director, Raman Research Institute, Bangalore.

Mr. G. D. Naidu, Professor A. Viswanath, Ladies and Gentlemen,

I heard with some astonishment that it is nearly eleven years since I came last to Coimbatore. Astonishment because I did not think that it was so long ago that I came here. The fact of the matter is this that when one is fully occupied and has not got any time hanging on his hand, all the time doing some thing, time passes very quickly indeed. These eleven years have gone as one, two, three – I do not realise it is eleven years. But when I came here at the invitation of Mr. Naidu, I find that eleven years have really lapsed by the many changes that I see.

Yesterday Mr. Naidu was good enough to put me in a car and sent me up to Ootacamund. Apart from streets of Coimbatore, I feel how new factories, new institutions springing up just along the road between Coimbatore and Mettupalayam. The road between Coimbatore and

Mettupalayam has become a magnificent cement concrete smooth roadway. Everything has changed. So I realise that all these must have taken time. But one thing has not changed, I am glad to see and that is Gopal Bagh and its inhabitant Mr. G. D. Naidu. He is the same genial host. He is the same person whose heart is set upon in helping his young countrymen. His heart is set upon using his skill and knowledge, to invent new things. It may be clocks or it may be radiators or it may be films or it may be something else. He always wants to do something and I discovered as a result of my visit yesterday. He did not tell me. I discovered that he had a – he or – his son – most beautiful Bungalow in Ootacamund. I think it is far more beautiful than the so called Raj Bhavan which sits on the hill. But Mr. Naidu does not go there. He wants to sit here. He prefers or to be locked up in this little place with these buses and do some work rather than enjoy himself as he is entitled to, in the midst of that wonderful place. This is the man entirely and that is what he is and that is why – as I said he is the same as before – one points deliberately I said that Mr. Naidu is a man in a million and even that is an understatement. It is not many to whom it is given to devote themselves so whole heartedly to the good of their fellow beings. He is an institution

in himself and when he came to me and said this is a very special occasion and explained to me what it was, I considered immediately it was my great pleasure and as you see I have seen now, there have been great changes. But his desire to carry on the good work has not diminished in the least. You see like magic overnight, you are all here yesterday, I am here today and I cannot imagine that what I saw yesterday, I am seeing today. Overnight he set up this place so that you could all gather here and on this occasion, I would like to say some other things.

Quite rightly Mr. Naidu complains that his ideas about education, about industrial education do not find favour of the authorities. He has got many complaints to make. But I would like to say this, that experience all the world over support broadly speaking, this notion of how to learn and do things. In this connection, I will tell you a small – as I read yesterday quite accidentally – the story of the life of the famous Walter Crysler. You might have heard of the Crysler Corporation, one of the giant figures in Automobile industry. I read his life and I was enormously impressed by what was put there. I dare say Mr. Naidu knows all about it. He began as a cleaner in a locomotive shop

earning five cents an hour. It is not much in American money. Look at the cleaner and when the foreman was so impressed with his duty - with his devotion to duty as a cleaner, that he allowed him as a concession to learn the handling of the machines and do some help in the repair shop and very soon, within 5 years he became such an expert on the handling of locomotive machinery that he rose to be one of the leading foremen in that locomotive workshop in that country. But that is not all. The story goes that one day he visited a great exhibition at Chicago and found a very beautiful huge wide monster, big leviathan like motor car, set there at the exhibition. He simply looked at and simply fell in love with it and he went there and saw it again and again and he made up his mind and said that he was going even to buy up that thing. The man said "5 thousand dollars nothing else, hard cash". He did not have the money. He borrowed his own money, his wife's money and borrowed some money and bought the 5 thousand monster. What did he do with it? Do you think he went riding on the car? Nothing of that sort. He pulled it into pieces. 5 times he took everything into pieces and put it back again and having done it the 5th time his wife suggested that perhaps now they could go

on a ride in that motor car and they did go on a ride and nearly came to grief. But afterwards it began to run. That is how Mr. Walter Crysler learnt the working of a motor car, by his own hand, by doing things and a time came when he rose up and up. Another most interesting story about him is, the President of the Buick Company sent for him and asked Mr. Crysler "Look here do you know anything about Motor Cars?" "Yes I am interested in Motor Cars". "Would you care to come and work with us "Yes" and "how much salary you want" "You see I am getting 12 thousand Dollars from the "locomotive workshop". "We are still in the motor-cars industry and we are still in doldrums. We cannot afford to pay you so much. Then Mr. Nash told him "Would you take 6 thousand dollars a year. He said "Yes". At once he gave up 12 thousand Dollars and took up a job for 6 thousand Dollars, so as to have the opportunity of doing things. A really wonderful occasion and no wonder that in a very very short time he became the colossus of the Automobile Industry. The Buick company made him the president and he was the vice-president of half a dozen companies and one motor car company was in doldrum. It was about to go in for liquidation. The President sent for him

and said "Now Mr. Crysler I want you to pull this out of this muddle and make it allright". "Yes I will do so, but what will you offer me". "Two million dollars per annum and two years to do it". Is it very fair – a man who was getting 5 cents an hour getting two million dollars per Annum and he made it in two years time and Crysler was asked "what are the secrets! I give you what you want. What is the secret of your success". The secret of the success is just this, that he had no need for anybody except for men of his own type-men who had worn overhauls, who handle things, knew jobs and he got the right men in the job and this is all the trick. Once you get the right men in the right place that everything will go like magic. This is what happened and Crysler you know, became the founder of the famous Crysler Corporation one of the biggest figures in motor car industry. Of course, he worked too hard like Mr. G. D. Naidu 18 hours a day. He did not live very long. But the story goes that on one occasion he had a great social party, just like here - a big party in his house. The story goes that everyone around that table had been a man who had worn overhaul that is to say he has been a workman. Mr. Crysler was the Crysler the workman, such an American workman

and everyman around the table, executives drawing salaries of 20 thousand, 30 thousand, 100 thousand dollars. They were all men who began as overhaul workers. I was extraordinarily impressed by that story because that really shows that Americans at least - we all know that America is a land of Dollars and multi millioners a land of what you might call almost superfluous wealth. The secret of the prosperity of America, their success in the Industrial world was just this. They do not believe in people who sit in arm-chairs and tell other people to do. They believe in people who have done things with their own hands. Who are the ordermen to do such a thing are quite capable of doing themselves and tell the men to do that, because they know how to do. Men who can talk theory to the executive and practice to the foreman who are equally at home at the fundamentals and at once they can do the job. That to my mind is the essence of success not only in industrial field, but in every field of human activity. The men who have done the job themselves are men who can do any other job. The only way to learn is to do it.

Mr. Naidu's philosophy of education is really on a very sound common sense. I may say so without any impertinence.

He is a man who understands things. That is not by his being fed up with theories but by actually handling things, taking into pieces and working with it and this is true not only of industry, but also it is true of science. All great discoveries have been made by men who had themselves worked with their own hands, who know exactly what it is they are looking for. It is no seat of the director of a laboratory to expect to direct others and what will happen? The others will expect others to direct and so on and so on, and ultimately the only work that is to be done will be by the peons who do not know what they are doing. Direction is useless unless it comes from people, who know what exactly they are to do. In fact in science it is usually that all great discoveries are made by men themselves who are capable of using their rightful understanding. Now having said all these, perhaps I think I have mentioned it because Mr. Naidu's remarks are certainly provocative. But I think there is a tremendous lot of good sense behind it and I think myself not only worth that what he said applies to industrial training but it applies to much of our training in various branches of engineering, science and so on. What he thinks for example, of students who know only the outside of an expensive machine. I will tell you a story in this connection.

Near my institute there is a little hill called Kampa Gowda Tower. One day I saw some 4 or 5 people standing on the hill. There is something on the hill and somebody looking into it. Gentleman in charge was an officer in the Survey of India. I was curious to see what they are doing. I went up and asked him "I say what is it that you are doing." "Oh we are doing a gravity survey" and "what is the instrument you are having." "Oh it is somebody's surveying gravity metre. "Could you tell me what is inside?" He never opened it. He did not know what is inside. Expensive instrument, bought out at great cost of 5 thousand dollars or something possibly the materials inside is worth about 5 dollars. This is the point gentlemen, working with an instrument he does not know what it is and please do not think it is an exception. In the vast majority of Indian laboratories today you have the most expensive instruments costing anything from 10 thousand to 150 thousand Dollars. If you ask anybody in that laboratory, please throw it into pieces and put it back again, he would be simply struck with horror. No wonder that we cannot make any progress in science. We cannot make any progress so long as we buy the know-how, borrow the money and buy instruments and anything goes wrong with them you buy the know-how to repair

the instruments and so on. How can you progress? We have to completely rethink our entire approach to the problems in technical and scientific education. We have to begin teaching the people how to make things, how to handle things, how to make, do with all sorts of little gadgets and make expensive material. Then we acquire confidence and courage and ultimately we shall be able to stand on our own legs. Please do not think that we borrow only materials and apparatus, not at all. You borrow also the ideas. We borrow our problems. We are only camp followers. We follow the West, of course including Russia. We copy them most faithfully and in the end what is it that happens. We do not know anything. We are simply copyists and remain copyists all our life. We cannot in the field of science so long as we rely on getting our ideas and getting our problems, on getting our know-how and getting experts to come to teach us how to work in our laboratories, we should remain exactly where we are. I can tell you all the money that is spent on scientific research, until and unless all these notions are wiped out until and unless we get really to brasstacks—and understand how things to be done, all the money spent must as well be bundled up in gunny bags and thrown into the Bay of

Bengal. Well, I am not making an overstatement. I am telling you what I believe honestly and I am prepared to say in public anywhere.

Mr. Naidu in his own humble way he started motor car repairs. But what I want to tell you is this, that the basic idea behind it is a far reaching one, very far reaching. It extends to the whole of scientific and technological activity in India and that is it must be revised in the sense of, we must teach people the essential matters. What they are dealing with, what component parts of the instruments, how they are put together, how they work together, how to set them right and so on. These principles apply equally to the repairs of the most expensive scientific equipment. Well having said so much now I have taken up so much of your time, ladies and gentlemen, that I find it difficult to spare any time for the task which Mr. Naidu has laid upon me, that I must tell you about the work that is going on in my institute. I do not think it quite fair that I should take up a lot of your time.

I think you see on every occasion I come here I do remember that last occasion Mr. Naidu succeeded. I had a talk to the students and he succeeded in making me

also autobiographical. I told them the story of my 4 years I was at college. Mr. Naidu took it all down and I read it myself and I am glad I did not make a big fool of myself. I spoke the truth all the time, fortunately spoken in such a non-vain glorious-spirit. I just told them what had happened, so that it must impress the young people with the lessons which I learnt in my life as a school boy. Well, people have always told me many many times Mr. Raman why don't you write an autobiography." My answer to that is this. Sir only when a man is suffering from senile decay that he will think of writing his autobiography. I am not yet suffering from senile decay. What is more I can tell people that I am just beginning my scientific career. I began it in the year 1924 forty years ago but to-day in the year of 1964 I am still at the beginning of my scientific career. You may think that it is an astonishing statement to make. Let me confirm it by a very simple fact. Only the other day, i.e., three months ago I started building a grand new building for a new institute. People asked me what I want to work there. "I am going to work" "what is the subject" I said again "I am going to work there". That is all nothing more and the building has come up to splint level a big building but not bigger than

I want really. I built it so that I can have the proper kind of facilities in my new scientific career to begin. I have just mentioned it to you I am not boasting and it is my real attitude towards science. I cannot tell you all that I have done or am doing for the last 10 years. But I must Mr. Naidu remarked that I have been doing nothing at all in the last few years. So I want to tell him that I have been doing a good deal. But let me be frank. It must be interesting if I begin with a very very short history that goes back to the beginning of my scientific career about research Institute. In the year of 1914 when the first World War broke out, I had the opportunity to live in Madras. I made up my mind that I would build a research institute at Madras. I was then an officer in the Indian Finance Department. You see I must have a place to have research institute of my own in the sense I would be able to work. Well, at that time I wanted to have it in Madras for the simple reason that I had been educated in Madras in the Presidency College and 4 years in that college is certainly the beginning of my scientific career. I thought I should do something for the city not a bad place as you know. I do not know many of you know it and I have got a lovely piece of ground about 4 acres in area worth a lot of

money today. It was worth not very much in those days and I still entertain the hope of putting up a big institute there. But at the moment what has happened is this. I have been trapped by force into building a research institute at Bangalore where I have now one. That institute you see, has so to say grown in spite of myself. I never thought it will be so big and never believed it would be so big. Even my wife did not believe that I would have the energy and capacity to complete that building. Today you can see the buildings from the campus not only the main institute, the workshop and the laboratory, about 10 quarters for my staff, a very nice house for me to live in and two libraries and so on and so on and now I am building one more. Now what for? I want to tell you this. You see experience has taught me and this is what I should like to say and supplement what I told you about the fundamental needs of research. In the course of my long career–please do not think I had a triumphant march, I have been through experience that would have blackened or that would have corroded the spirit of anybody else. They have not succeeded in corroding my spirit that has risen superior to all. But let me tell you I suffered a great deal from many things, jealousy of ones own colleagues in the University. The stupidity and

malevolence of members of council of various institutions, the utter stupidity of the bureaucrats. They are the worst of the three you know. Well we will not develop on that. But one thing that all these experience has taught me that the only way a man can do research, can really do research, not a bogus, make believe sort of research, is you must do research in a laboratory of which you yourself is the master. He has not got orders from anybody else. He has the freedom to do what he likes and the freedom not to do the work he does not like. The second freedom is far more difficult to get especially in Government institutions where you spend most of the time in doing, being compelled to do, what you do not want to do and what you do not care to do. Then it is for this exact reason that in the year 1948 I knew that the time was coming and I prepared for that incident in order to build up the place where I could continue my scientific career till the last. I do not know when the last is. The astrologers in whose predictions I have no faith have not ventured when I will quit this world and if they do I should do my best to falsify their predictions by living a little longer. Well what I am telling you is this. The basic idea was for a scientific man who has got the real desire to work, he must create his

own environment. He must build his own laboratory. He must select his own staff. He must select his own equipment he wants. He will have a little money, but he knows how best to use it and he should have the freedom to choose his own pathway, not necessary what other people think that it is good for him or good for his country or good for the science not at all. The essence of intellectual freedom is the essence of the facts of successful scientific research. These are the basic ideas which led me to put up this institution.

Now I want you to know something about the so-called Raman Research Institute. The fact is this. That the institute does not stand by itself. Today the campus of the institution is a big campus by the way, but it is also the head quarters of the two organizations of which I am the president which are engaged in activities of a high degree of scientific importance. Only the Indian Academy of Science of which I was the president founder, 30 years ago was established and every month since then the Academy has publishad two substantial journals each about 60 or 70 pages-called the proceedure Academy A. C. biological, physical mathematical and chemical. Month after month, every month without fail they have

never broken the record. Without fail on the last day of the month for the last 30 years, these two journals have come out month after month. Never a single day's delay. Not only that, there is another periodical now which was formerly monthly now fortnightly. I am the president of the organisation once there. It is called Current Science. Fortnight after fortnight for the last 34 years that journal has come out without a single day's delay in publication. Now if you ask me how this has happened. The answer is obvious. The answer is that I am the president of the Indian Academy of Science, and today I control the Current science organisation. I want you to realize that there is one thing more difficult in doing research and that is to establish and conduct successfully a scientific research job, because you may choose to print what you like, but nobody will subscribe for it. To establish a scientific journal in the scheme of the scientific world and keep it going for a long time it requires persistant and strenuous efforts of no mean order and I have done this for 30 years for the academy and I have been doing it now for quarter of century for Current Science and I can give you an example of what has happened. I apprehended some difficulty about finance. I said now "let us make the experiments and

double the subscription of our proceedings doubling it overnight". You thought at once people would stop subscribing. Not at all – Every subscriber paid up the double subscription without hesitation and our subscription is now increasing, not only in India but all the world over. It is a tribute to the scientific world of the position which the academy has established the journals for itself in the scientific world. It has gone on for 30 years. Now the campus of my institute is also the headquarters of the Indian Academic Science. It is also the Current Science conducted for building, the cost of which was found by me and I am the president there by my permission and sufferance and support. Now you realise that these two publications stand on and occupy an unique position in the scientific world in India. There is no other scientific journal with such a record of this kind which have established for itself such a position of its scheme with a continuous steady publication for 30 years. It has never been done. I do not say it cannot be done, but never been done and therefore it is right for me to say that my institution today – I am not claiming too much–is the unofficial centre of gravity of science in India. That centre of gravity is in Bangalore and not in Delhi, Calcutta or Bombay. I make that claim because of

these facts. If the institute has nothing else but given so to say the opportunities to these organisations to carry on it would have, its work itself. But that is not my idea. You cannot conduct a scientific journal. The Journal cannot conduct itself. It does not go to the press of its own accord. Somebody has to collect the materials, somebody has to examine it, somebody has to operate its publication, somebody has to edit. Therefore you require a corpus of scientific men on the spot. You cannot do it by post. You require on the spot a number of scientific men, two three four or so many as you can have of the highest rank who can conduct this organisation and this is here that my institute is called to play a part which at the moment finds it extremely difficult to play. I have of course rely upon the friendship and good-will of the fellows of the academy and I would rely upon the good will of the men of the Current Science Association. But none the less we want people on the spot and there we have got a very great burden on this institution and that is why I think in the interest of the nation – I say so – in the interest of the science in India, that my institute is supported in such a manner as I can assure the continuation of the work of the other two organisations, to say nothing at all of

the work in my institute. There must be a research institute to back the research journals. The research institute is extremely of this kind with not one or two but half dozen competent scientific men of highest rank in the country whose names will command respect and who will conduct these periodicals with greater and greater freedom and greater and greater glory.

Now having said this you may ask me now what is the institute itself doing by way of research. Now, here I come to an extremely interesting question which I would like you to apply your mind to it if you do not know it. You see science I want you to realise, ladies and gentlemen, is not a static culture not at all. Essentially it is not found in the old text books because still taught at B. A. & B. Sc. Classes not at all. Science is a dynamic thing and as everybody will tell you and newspapers often tell you. Science is growing like mushrooms, not like mushrooms going up like atombombs. It is expanding at collosal and incredible rate. What is the news today is the ancient stuff tomorrow and the advance is so great that the vast majority of scientific men today a great majority, know only very little about science in general. They know a great deal about the very very small part of their specialities. That

is the situation unquestionably in every branch of science and see therefore we are face to face with science in India and face to face with the crisis. The crisis is this. We cannot do science without expensive equipment. We have no money to buy equipment and if we have money we have no foreign exchange. We are blocked and we have no foreign exchange for expensive equipment. If science cannot be done without expensive equipment if the expensive equipment is made outside India and if they have got fine money, they have got to send money abroad to purchase foreign exchange, the result is there can be no science. But that is not the only difficulty. There is a far greater and deeper difficulty a psychological one which I do not think many people realise, which is kept as well as I pointed out, because I know the position there is in the world of science. You see the British people they ruled us from the victory of Plassy, upto the date of independence and one lesson that they taught us was that we are an inferior race. All the great scientists were born in Great Britain, Isaac Newton and Farraday and so on, everything great came from Britain. Now of course we are not sure about that. We are also prepared to admit that they may come from Germany or France and so on. But even Americans

they all know that modern science is a creation of the Western civilisation including America. Of course Russia is also included. Science comes to us in the way. It is not an indigenous product and therefore believe that they believe it. They tell us that we believe that. If you do not believe it why is it so, also many students want to go every year, obtaining this scarce foreign exchange and go to study in foreign countries. So also there is not one single Indian student who can stand up and say "Sir we can do the just". I have never heard a single student say that "Sir we can do a just good research in this country as anywhere else". If you cannot do it you better do not do any research at all. Nobody will ever say that they all want to go America. If they cannot go to America they will go Timbuqui too, Mexico anywhere Australia, New Zealand anywhere except India. You see we have a psychological barrier, a tremendous by far the greatest obstacle in the way of science in India today is the psychological barrier which makes us believe that all sciences come to us from these countries and we are only to learn from them.. We have got to import experts. Every year Dr. Bava imports experts to lecture to them. He has got no experts in India. He has got to get them from abroad to lecture to

them and so long as we believe that, how is it possible for us. The essence of research or the essence of originality you must be able to pick out from the East and so long as we think that everything new comes from somebody else, we have no place in the picture at all. We are simply outside the picture. We are simply camp followers. We are simply admirers in the theatre. You know somebody stated theatre and the lady threw her garland. That we are here to garland the great scientists of Europe and America. That is the position in science today not one Indian Scientist will ever credit any of the Indian Scientists for having found something worthwhile, if his findings differ from what other Europeans say. The bible truth works abroad. The common sense is of unimportance. This is the psychological belief. Now I think the Indian science requires that this psychological barrier must be broken, smashed, thrown over-board, utterly thrown out of our mind.

We have to realise that we cannot be men of science unless we are prepared to think for ourselves. I do not say that everything that comes from West is nonsense, not at all. I am the last man to say that. All that I say is this. We have the right to think for ourselves. We have

the right to examine the truth ourselves. We have the right to form our own conclusions and above all that the one thing that is most dangerous of all in science is the personality cult. You all heard of the personality cult how Mr. Krushchvve is dead against personality cult. The personality cult is the most dangerous in science because the personality cult enables what somebody has said into truth, whereas it is actually absolutely false. Scientific truth alone is what should be sought after. Then as a matter of fact, Newton Farraday or anybody said if you think that what he said is right, it is allright if what he said is wrong, we should only think he is wrong. You should not look at a gift horse in the mouth. I should say we must examine all gift horses and the science that comes from the West. We must not only look at their mouth, but we must pull their teeth. This is not a spirit of arrogance not at all. This is a spirit of truth following truth. If anything is learnt from anybody, they would never expect what anybody else said unless they pass it in their own minds and be satisfied with the truth; otherwise the difficulty will be an unending one. This is the situation today. Unless there is a positive revolution in the mental, spiritual and psychological outlook of the general generation, there is no future for science in

India. I say it unhesitatingly. Not with all the handicaps that we suffer, not with the enormous rate of advance in Western countries, not with the vast sums of money amounting to thousands and millions of dollars which they throw into science, not with the enormous facilities that they have in this way. Mr. Naidu tells me that we cannot even make an automobile in India today not in the whole of India. We cannot make a single clock unless we get a spring from somewhere.

You see in all respects we are suffering from an almost incredible handicap and over and above that we take an iron chain and hang it not only round our own neck and so on, we hamper our minds our souls and our hearts. We give stupid subservience to the west, stupid belief in their infallibility. Then I think it is better that we close up the science department. We must stand up on our own legs. This is I have spoken to you with great vehemence, because I do not get opportunities. Mr. Naidu has given me the tip, because he has not been sparing to talk to the other people and this is the platform where I can speak without fear of being misunderstood. This is the position. I have great deal to do with the activities of my institute, because it is with these ideas I say to myself.

All my life time I have realised these things that come to me blending parity. They came for example when the late Sir Austosh Mukerji offered me the chair and told me to go to Cambridge for 2 years, I think I agreed on the first day. The next day I went and told him, Sir I am not going, because my Gurunath tells me, "Raman do not go to Cambridge, what happens? If you go to Cambridge and come back what will people say". "Oh Raman went to Cambridge and studied physics in Cambridge and he is now passing it on to students. Show to the world that you in India without stepping out of the country can lead yourselves of your own ideas, create your own school, then people respect India and respect your country." That was the finest and truest advice given and I would tell people why there should be only one Indian for 30 years. The reason is that I had never been to Cambridge. You see in the school I solved no problem, because I knew that I could not possibly compete with all the people with their wonderful instruments and so on. Let me find something where at least my Indian facilities and my Indian training and what opportunities I have, will serve my purpose. I showed my line of research. I should do my line of work completely, independently without any inspiration from

any European or American scientists. I showed my own path, knowing that the path is a promising one. That was the secret of my success when I was in Calcutta. That has been my inspiring guidance today in all my work. We should avoid trying to compete with Western counterparts. We should try to find pathways of our own, not by the procedure as I told you. Do not accept all the shibboleths and all the nonsense and all the rubbish that has come to India from the West. If research is helpful do not read of what the world says do not bother about it. You investigate the subject yourself with an Independent mind, with an open mind not for your glory but to find out the truth. Then perhaps you will find the truth. Then you will find out something worth-while for Indian science. It does not require all the expensive gadgets of Europe which will come here to the credit of our own country and yourself. These are the ideas which have inspired the work of my institute and I humbly believe that my institute to-day serves the great purpose in the country, because it is inspired by these ideas, which I think stand for the real future of science in India. It is there that with ideas of their own they can lead India to a rightful place in industry and science. Well I said gentlemen and I think I must stop. I am not going to

further details about the actual work that has been going on for the last 4 or 5 years. I assure you that what I have been telling you is a fact and I am following up new lines of thinking, free ingenious ideas which seem very very strange indeed to the European scientists which I know are right, because they are good research of careful study and experiment. I think with these words I now formally declare this new course opened and thank Mr. Naidu for having given this opportunity.

Speech by

Sri G. D. NAIDU

As I said in my previous speech within these 10 years all morality integrity, concentration are all changed. As an example now I am saying, here in 1945 this Arther Hope College of Technology was constructed in 42 days. Then the President Hall was constructed in 18 days in 1952. Then in 1962 this projector factory in Pykara buildings which the late Dr. Subbarayan opened was constructed in 9 days. In the same manner here this building should be ready in June 15th when the students would be going out and at that time it should be ready for this function. It was arranged liked that. Then on the 13th of this month when I went to Sir C. V. Raman he agreed to come here. Then I returned and told that this must be ready by this time. Ofcourse, the mentality, the integrity everything changed. In the same way the change has taken place in our staff also. Some fellows when the bell rings go out and even 15 minutes before they go out. They do not care whether the work is carried out or not. Like that they were going. But some of the fellows worked

day and night even without food and without any other convenience and they started and completed all these buildings within two weeks. Three days back there were no electric lights and all the wiring and putting up of lights was completed within these three days. Like that they have done the work.

All these ceilings are completed, but when it is made here the cost comes to Rs. 15,000. In England for one person for one hour the wage is one pound or half a pound. In our country the wage is for one day two Rupees, three rupees or five rupees. On that level the cost would be less than Englands' price. But here it is three or four times more. Here there is one Asari by the name of Ponnuswamy Asari who does not know English or anything. I asked him to make one garage tool. He has made it for less than half the cost. The tool is kept there. One can see it there and for that I present Rs. 500/- to him. Now I am going to start manufacturing this garage equipment by this fellow. Though many industries have been started, yet the garage industry has not been started anywhere in India. On account of this there is a loss to Government of 5 to 10 crores of rupees. Since automobile service is not properly done no proper equipment

is available inspite of 5 to 10 crores of rupees going out. If anybody comes here for training in this industry for 6 months or one year or two years, they can start this industry. So many machines are here. They can learn and start any Industry.

Vote of thanks by
Professor **A. Viswanath**

Sir C. V. Raman, Sri G. D. Naidu, respectable guests, Ladies and Gentlemen.

It is my pleasant privilege to give you a hearty vote of thanks for having come and taken pains to attend this function and made it a success. It will not be improper for me to say in this connection a few words having had the privilege to take up a key role in this intensive training scheme of Sri G. D. Naidu. You are all aware we are opening the 18th course. Certainly each course must have given its own experiences and the next course will be incorporating such changes and other things and improving and these 18 years should certainly be considered as having come up to a stage of perfection.

The significance of the short term courses probably is not apparent nor probably understood in the environment in which the scientific world in India as Sir Raman has said have been brought up and trained to think. If human nature took endeavour to progress right from the

Cannibal stage to present generation, generations of people have been attempting to acquire extra knowledge, extra skill, improve their own enjoyment in life - in fact enjoy all good things that God ever gave and that has been a continuous stage of progress. The record of civilisation or the history of civilisation is just a record of human endeavour to raise the standard of living and come higher and higher. Naturally each successive generation starts at a higher level. Like that from the first course to to-days 18th course we have certainly acquired and we are still starting at higher and higher level. Now the significance of this is going to be clear a little while. For over a decade our country has set on planned industrialisation. All on a sudden after we have attained a certain stage of industrial progress in so many different walks of life, there is yet the paucity of technical trained man power. Now this trained man power is not of the ordinary type. It has got to fit in with the developments that have taken place in the world elsewhere and the equipment we are acquiring from elsewhere still planted and started in India. That means new skill, new knowledge that is the requirement of modern technical trained man power. We have no time to wait. These schemes and projects will not wait 3 or 5 years till our

routine professional technical colleges and schools will train their boys. Nor can they wait and the demand is growing like anything. The only answer to that is the short term intensive course. With the depart of the British we had attained a certain status in the sphere of technical education. I call that as an endeavour of the present or past generation. A certain level has been reached. To-day even after about 13 years we have not gone one step ahead in this type or the technique of that endeavour to train technicians. If you imagine engineers who lived 25 or 30 years ago, having adopted a certain standard, a certain material a certain technique of conceptions put up a bridge successfully. If the engineers today repeat the same you will laugh at them. The technical education is exactly like that. These technique, method, concept that have been practised earstwhile at least 15 years ago are still there and the greater pity is newer technique, newer ideas will not enter because as Sir Raman said there is a psychological barrier against introducing anything new unless it comes from the West. Well that is the situation. It is in that situation I would like you to recognise the worth of what Sri G. D. Naidu is doing. Now these short term intensive courses are the best and the only answer which will meet our large demand for

technical man power. No doubt colleges and technical institutions are growing and they will meet only after a few years and to a small fractional extent only. Governments are also considering 18 months course polytechnics and so many other things, in addition to that, institutions like steel work and all the major factories do not care for the technical institutions at all. They set up their own training programme, short term 6 months, 9 months, some even sent to the factories who are supplying the machines and there they get the training and now all these are eye opener. If we are to proceed our best guide is to think what is going to be the status of this country in 10 years or 15 years. Our own state of progress is a gift or the result of whatever our fore-fathers have thought of. What their children and grandchildren ought to be and because of their forethought we are in a certain stage of progress. It is our duty equally so for our next generation to visualise what will be 20 to 30 years ahead and plan. If we do not do it, we are not doing our duty and obligation. The more or greater your vision of thinking and visualising what is the situation under which the future generations are going to live and plan to train people to-day's younger generation to meet that situation well, you are answering your part. This is

exactly the vision of Mr. G. D. Naidu and I am glad I have an opportunity to speak this to you and thank you very much all the friends, visitors and guests.

Thank you.

18th VACATIONAL COURSE

AUTOMOBILE COURSE.

S. No.	T. No.	Name of Student		Rank
1.	A 8	R. Krishnan,		
2.	A 3	D. Dharanipathi		
3.	A 19	S. Srinivasan		
4.	AC 5	K. Ramaswami		
5.	A 6	S. Krishnamoorthy		
6.	A 21	S. Sampath Kumar		
7.	A 20	S. R. Sabapathi		
8.	A 5	B. Krishna Kanthan		8
9.	A 12	G. Rabindra Raja Singh		9
10.	A 4	C. Kandaswamy		10
11.	A 14	S. Rama Mohan Rao		11
12.	A 10	Praveenchandra Bagath		12
13.	A 11	V. S. Ramamoorthy		13
14.	A 13	C. G. Ramasubramaniam		14
15.	A 1	B. Butchi Reddy	Part I	15
16.	A 16	P. Somasundaram	,,	16
17.	AC 2	Kishore B. Mehtha	,,	17
18.	AC 4	A. Raj Kumar	,,	18
19.	AC 1	T. V. Krishnasamy	,,	19
20.	A 18	D. Shashikanth	,,	20
21.	A 15	R. Ramabrahman	,,	21

22.	A 17	N. Stanley Joseph	Part I	22
23.	AC 6	R. P. Ram Manohar	,,	23
24.	A 9	A. Musthafa	,,	24
25.	A 7	R. Kanagavelu	,,	25
26.	A 2	K. T. Bharathi	,,	26
27.	AC 3	R. M. Manickam	,,	27

18th VACATIONAL COURSE
RADIO COURSE.

	T. No.	Name	Rank
	R 13	A. Vairavan	1
2.	R 12	S. Vasudevan	2
3.	R 9	U. K. Sundaran	3
4.	R 3	S. Gopal	4
5.	R 11	S. Varadarangan	5
6.	R 5	N. Jaya Mohan	6
7.	R 10	M. O. Thomas	7
8.	R 1	Aravind Shantilal	8
9.	R 6	A. Moorthi	9
10.	R 8	R. Santhanakrishnan	10
11.	R 2	J. George Michael	11
12.	R 7	T. R. Saktivel.	12

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S. No. and Rank	T. No.	Name of Student	R
1.	010	S. Balasubramani	Passed
2.	029	M. O. Roy	"
3.	020	S. Antony Arumainathan	"
4.	028	C. S. Kothandaraman	"
5.	012	M. A. Sithian	"
6.	009	K. Balasubramanian	"
7.	001	M. Sivasankaran	"
8.	005	R. Krishnamurthi	"
9.	024	H. Paulraj	"
10.	008	T. Chidambara Kumaraswami	"
11.	011	C. Periaswami	"
12.	026	M. Natesan	"
13.	023	G. Lakshmanan	"
14.	019	N. Mahalingam	"
15.	022	M. Natarajan	"
16.	025	V. N. Chitty Babu	"
17.	006	S. P. Palaniappan	"
18.	021	G. Badhra Giri	"
19.	034	V. A. Ravindran	"

			Result
			"
			"
			"
			"
		...amurthi	"
	007	R. Kannan	"
26.	035	J. Narayanaswami	"
27.	016	T. V. Venkataramani	"
28.	013	T. P. Vasudevan	"
29.	030	P. Balasubramaniam	"
30.	033	S. Jayaram	"
31.	032	T. Ramamurthi	completed
32.	002	S. Aiyaswami	completed
33.	004	S. G. Kesavan	completed
34.	018	K. Lakshminarayanan	
35.	031	V. Natarajan	
36.	036	M. Balraj	